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# Assessment of professionalism among undergraduate medical students in Faisalabad: where do we stand?

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## ABSTRACT

**Background and Objective:** Teaching medical professionalism is considered important for identity formation of healthcare professionals and must be a part of the curriculum at the undergraduate as well as postgraduate levels. Undergraduate students are often ignored in our culture when the question of professionalism comes under discussion and all the importance is usually given to postgraduate students. This study was designed to compare the professionalism among undergraduate medical students of the public and private medical institutes in medical colleges of Faisalabad city, Pakistan.

**Methods:** It was a cross-sectional comparative study conducted in a public and a private medical institute in Faisalabad from September 2021 to November 2021. A total of 462 undergraduate students were included from both colleges. The modified version of Penn State College of Medicine Professionalism Questionnaire for medical students was used to assess seven domains of professionalism among the students. SPSS 23.0 was used for statistical analysis

**Results:** Response rates of 89.7% and 59.2% were achieved from the public and private medical college respectively. Respect was the highest scored domain among students of the public sector institutes, while equity was the highest scored domain by the private sector medical college (mean =  $4.34 \pm 0.81$  and  $3.91 \pm 0.99$ , respectively). The enrichment domain was scored lowest by the students with public and private sector institute (mean =  $3.9 \pm 0.041$  and  $3.7 \pm 0.055$ , respectively). There was a significant difference in the domains of professionalism among students based on their years of education ( $p > 0.05$ ).

**Conclusion:** The undergraduate medical students at public as well as private sector colleges have positive professional attitudes, especially at the stage of first and the final years of training. The reasons for a declining trend of professionalism during mid-years of medical education among students are yet to be explored.

**Keywords:** Medical professionalism, undergraduates, medical students, Penn State College of Medicine Professionalism Questionnaire.

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## Introduction

Healthcare professionals deal not only with the disease but are also concerned with the feelings and emotions of human beings in stressful conditions. During these hours of extreme anxiety at both ends, medical professionalism is the main factor which builds the trust relationship between patients and doctors and is an integral component of medical life.<sup>1</sup> The significance of adding the component of professionalism in medical curricula at the postgraduate as well as undergraduate level is well established.<sup>2</sup> It is now believed that professionalism is a competency which can be taught to the students and can be incorporated through well designed educational strategies.<sup>3,4</sup> Teaching medical professionalism

is considered important for identity formation of healthcare professionals and must be a part of the curriculum at the undergraduate as well as postgraduate levels.<sup>5</sup>

Although the importance of teaching medical professionalism is well known at the undergraduate level, it is still not a well-developed and well-emphasized component of the undergraduate curriculum in Pakistan.<sup>6</sup> Undergraduate students are often ignored in our culture when the question of professionalism comes under discussion. Only one study was conducted in Karachi, Pakistan, which assessed the level of professionalism at the undergraduate level in our culture.<sup>6</sup> It is advisable to incorporate professionalism in the teaching curricula of undergraduate medical students because it has shown to

have a positive effect on the professional attitudes of medical students in their clinical practice.<sup>7</sup> Studies evaluating separate topics related to professionalism like plagiarism, patient safety, and altruism in medical doctors are published from Pakistan; however, appropriate quantitative studies exploring the trends regarding level of professionalism in relation to undergraduate medical students are scarce in the local literature.<sup>8,9</sup>

This study was designed to compare the level of professionalism in undergraduate medical students of public and private medical colleges in Faisalabad city, Pakistan.

## Methods

A cross-sectional comparative study was conducted on undergraduate medical students of public and private medical colleges of Faisalabad from September 2021 to November 2021 after taking approval from the ethical review board of Faisalabad Medical University (FMU), Pakistan. Medical students, from first year to final year, of FMU and Aziz Fatimah Medical and Dental College (AFMDC), Faisalabad, were recruited. Simple random sampling technique was used among 1750 undergraduate students from the public sector and 500 students from the private medical college. Using OpenEpi calculator with 95% confidence interval, the sample size was calculated as 316 and 218 from each college, respectively, with each year having equal number of students to ensure a generalized assessment of professionalism at different levels of undergraduate training.

Penn State College of Medicine Professionalism Questionnaire for medical students is a reliable and validated tool used to assess the seven domains of professionalism, i.e., accountability, enrichment, equity, honor and integrity, altruism, duty, and respect. The same tool was adopted in the present study with slight modifications, according to our settings, after taking permission from the author.<sup>10</sup> There was a total of 36 items, with item numbers 7, 6, 4, 8, 3, 6, and 2 related to the seven abovementioned domains of professionalism, respectively. A 5-point Likert scale was used for each item, with 1 = never and 5 = great deal.

After taking permission from the principals of the colleges, the authors contacted the representatives of every class and the forms were shared electronically and in the paper format to collect data. Anonymity and confidentiality was maintained at every level.

## Statistical analysis

SPSS 23.0 was used to analyze data. For each domain of professionalism, mean and standard deviation were calculated and for comparison between public and private sector colleges, Levene's test was used. One-way analysis of variances (ANOVA) was used to find the comparison between different years during medical educational life. A *p*-value of less than 0.05 was considered significant.

## Results

A total of 350 questionnaires were distributed in public sector and 250 in private sector medical colleges, out of which 314 and 148 were returned (response rates were 89.7% and 59.2%, respectively). Majority of the students were female (55.8%), while 56.06% of the participants were day scholars. The year-wise distribution of participants is given in Table 1. Respect was the highest scored domain in public sector institute, followed by altruism and then equity (mean =  $4.3 \pm 0.81$ ,  $4.18 \pm 0.79$  and  $4.12 \pm 0.76$ , respectively), while equity was the highest scored domain in the private sector, followed by respect and altruism (mean =  $3.91 \pm 0.99$ ,  $3.90 \pm 0.93$ , and  $3.89 \pm 0.78$  respectively). The enrichment domain was scored lowest by both public and private sectors (mean =  $3.9 \pm 0.042$  and  $3.7 \pm 0.055$ , respectively). Respect was the only domain which showed more acceptance and appreciation among the students of the public sector as compared to private sector (*p* = 0.01). Table 2 shows the mean and standard deviation of the domains for both public and private sector colleges.

The results after applying one-way ANOVA show that there is a significant difference in five domains of professionalism among students based on their years of education, except for equity and altruism where no significant difference was observed between all the years. The mean differences in all years in comparison to first year is given in Table 3, showing that new students have more professional attitude in five domains which fall over in senior years and rises again when they are near to completion of their degree (Figure 1).

The results of our study showed that undergraduate students have medium to high levels of professional attitudes and there is

**Table 1.** Details of the study participants from the public and private medical colleges.

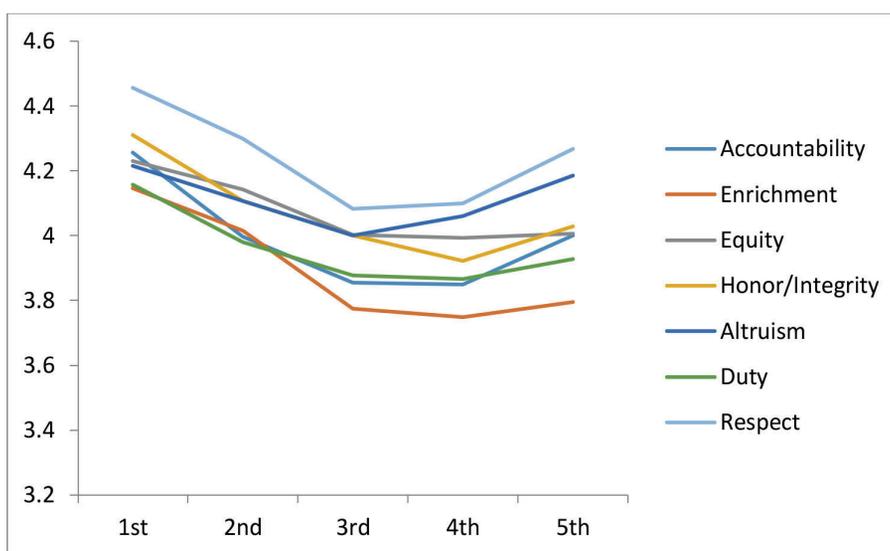
	Frequency	Percentage
Gender		
Male	204	44.1
Female	258	55.8
Sector		
Day scholar	259	56.06
Hostelite	187	40.47
Missing	16	0.03
Institute		
AFMDC	148	32
FMU	314	67.9
Year-wise distribution		
First year	58	12.55
Second year	81	17.53
Third year	121	26.19
Fourth year	126	27.27
Fifth year	76	16.45

**Table 2.** Means and standard deviation of domains of professionalism among the study participants.

Professionalism domain	Public sector	Private sector	p value
Accountability	4.0053 (±0.59)	3.841 (±0.64)	0.947
Enrichment	3.9269 (±0.041)	3.722 (±0.055)	0.493
Equity	4.1206 (±0.76)	3.917 (±0.99)	0.12
Honor and integrity	4.119 (±0.82)	3.876 (±0.87)	0.74
Altruism	4.189 (±0.79)	3.892 (±0.78)	0.52
Duty	3.998 (±0.75)	3.807 (±0.68)	0.873
Respect	4.343 (±0.81)	3.909 (±0.93)	0.01

**Table 3.** Mean difference in scores of professionalism in different years of education.

Professionalism domain	Mean difference with respect to first year with standard deviation				p-value
	Second year	Third year	Fourth year	Final year	
Accountability	0.25 (±0.1)	0.38 (±0.09)	0.39 (±0.09)	0.24 (±0.1)	0.01
Enrichment	0.19 (±0.12)	0.43 (±0.11)	0.46 (±0.11)	0.41 (±0.1)	0.01
Equity	0.24 (±0.14)	0.37 (±0.13)	0.38 (±0.13)	0.37 (±0.15)	0.3
Honor and integrity	0.34 (±0.14)	0.45 (±0.13)	0.53 (±0.13)	0.42 (±0.144)	0.01
Altruism	0.24 (±0.13)	0.35 (±0.12)	0.29 (±0.12)	0.16 (±0.13)	0.056
Duty	0.31 (±0.11)	0.41 (±0.11)	0.42 (±0.11)	0.36 (±0.12)	0.02
Respect	0.32 (±0.14)	0.52 (±0.13)	0.51 (±0.13)	0.34 (±0.14)	0.01



**Figure 1.** Year-wise comparison of professional attitudes among participants.

no difference between the students of public and private sector medical colleges. The medical students regarded altruism, equity, and respect as major traits in medical professionalism, while enrichment was given the least importance. The students projected compassion, provision of uniform patient care according to the need, and avoidance of unfair and offensive criticism. The attribute of working for the professional development of fellow workers was something that was not considered as a professional characteristic by medical students.

A decline in professional attitudes was noted among students of second-year and third-year students as compared to the first-year students, while another peak is seen among final year students when they are near the completion of their degree. The reason for this trend needs more elaboration.

### Discussion

Medical professionalism is a very broad term and universally there is no overarching conceptual context of this attribute that

is acceptable to everyone.<sup>11</sup> Generally, medical professionalism encompasses professional attributes, values, beliefs, and behaviors expected from a healthcare professional in a given situation to ensure safe and efficient provision of healthcare services.<sup>12</sup> No matter what framework of medical professionalism is being chosen, the importance of it in building and maintaining a healthy doctor-patient relationship is well established.<sup>1</sup> This study was designed to assess the professional attitudes of undergraduate medical students in public as well as private sector medical institutes and to see any difference between them. Variations in the professional attitudes were also assessed between the different educational years.

Between the seven domains assessed in our study, respect, altruism, and honor and integrity were the highest scored domains by both public and private sector medical students. Honor and integrity, respect, and accountability were also the highest scored domains in a study conducted in Lahore, Pakistan, indicating that these domains are given more importance in this region.<sup>13</sup> Maturity, respect, honor and integrity, and accountability were also the highest scored domains of professionalism by medical students and interns of a developing country working at the Ayder Comprehensive and Specialized Hospital.<sup>14</sup> In contrast to our study, young working doctors in different regions of Pakistan have demonstrated poor medical professionalism showing rigidity of opinions, unacceptability of contrasting perspectives, false pride, and perceived superiority over other professions and patients.<sup>15</sup> Another multicentric study on Saudi, Emirati, and Malaysian students showed that respect was the most popular, with 53% of the students strongly advocating this aspect in relation to professionalism, while altruism and self-less concerns were the least scored domains by the students.<sup>16</sup> Excellence, respect for others, and altruism were the highest scored professional domains in Saudi Arabia as well.<sup>17</sup>

Enrichment, which means willingness of an individual to initiate and offer assistance toward a fellow worker for professional and personal development, was the least scored domain by the undergraduate students in our study, which is in concordance with the study of Blackall et al.<sup>10</sup> from USA. People-orientation and active involvement in a group was one of the four major characteristics found in people with leadership qualities in medical profession, hence indicating the importance of enrichment on medical professionalism.<sup>18</sup> Mentorship, which is considered a very important attribute in training and career development of physicians and scientists, is based on the strong commitment by the people having the ability to think about others and lead in the team of need at all levels.<sup>19</sup> At the School of Medicine at the University of Texas, San Antonio, a peer-mentoring program at the student level was found to be very effective and helpful in providing assistance and guidance to the

students and has shown that peer-mentoring is a very useful training strategy to inculcate enrichment trait.<sup>20</sup>

A local study conducted among medical students in Pakistan reports higher acceptance for accountability, autonomy, and altruism when compared to the traits of respect and honor.<sup>13</sup> A study conducted in Malaysia showed that the perception of unethical behavior was 58.8% in first year that increased to 65.2% in the final year medical students.<sup>21</sup> There was a decline in professional attitude from second year to fourth year as compared to first-year students, which increased again in final year when the students are near the end of their educational journey. The reason why this happens needs further exploration.

## Conclusion

The undergraduate medical students at public as well as private sector colleges have positive professional attitudes, especially at the stage of first and the final years of training. The reasons for a declining trend of professionalism during mid-years of medical education among these students are yet to be explored.

## Limitations of the study

This study indicates the professional attitudes acceptable were to the undergraduate medical students; however, the exhibition and practice of these traits in certain conditions could not be ascertained. For elaboration of their actual behavior, the variation in the professional attitude with passing years of study needs further in-depth exploration.

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## Conflict of interest

None to declare.

## Grant support and financial disclosure

None to disclose.

## Ethical approval

The study was approved by the ethical review board of Faisalabad Medical University, Pakistan, vide Letter No: ERC no. 48.ERC/FMU/2020-21/159 dated 20-09-2021.

## Authors' contribution

**ZAC, SBE, and AA:** Conception of idea, analysis of data, manuscript drafting, and important intellectual input.

**AA and MMT:** Acquisition of data and manuscript drafting.

**ALL AUTHORS:** Approval of the final version of the manuscript to be published.

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